

# Foreward

## How Forecasts Are Made

Most of the annual streamflow in the Western United States originates as snowfall. This snowfall accumulates high in the mountains during winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Predictions are based on careful measurements of snow water equivalent at selected index points. Precipitation, temperature, soil moisture and antecedent streamflow data are viewed in conjunction with snowpack data to prepare runoff forecasts. This report presents a comprehensive picture of water supply outlook conditions for areas dependent upon surface runoff. It includes selected streamflow forecasts, summarized snowpack and precipitation data, reservoir storage data and narratives describing current conditions.

Streamflow forecasts are cooperatively generated by Soil Conservation Service and National Weather Service hydrologists. Forecasts become more accurate as more data affecting runoff becomes known. For this reason, forecasts are issued that reflect three future precipitation conditions — Below Normal, Average, and Above Normal. These forecasts are termed reasonable minimum, most probable, and reasonable maximum. Actual streamflow can be expected to fall between the lower and upper forecast values eight out of ten years.

Snowpack data are obtained by using a combination of manual and automated measurement methods. Manual readings of snow depth and water equivalent are taken at locations called snow courses on a monthly or semi-monthly schedule during the winter. In addition, snow water equivalent, precipitation, temperature, and other parameters are monitored on a daily basis and transmitted via radio telemetry to central data collection facilities. Both monthly and daily data are used to project snowmelt runoff.

## For More Information

Copies of Monthly Water Supply Outlook Reports and other reports may be obtained from the states listed below. Because of the limited space, snow survey measurements are not published in monthly reports. An annual snow survey data summary is published by the Soil Conservation Service for each of the western states. Historical snow survey data may be obtained at those same offices.

| STATE                    | ADDRESS   |
|--------------------------|---|
| Alaska                   | 201 East 9th Ave., Suite 300, Anchorage, AK 99501-3687                  |
| Arizona                  | 201 East Indianola, Suite 200, Phoenix, AZ 85012                        |
| Colorado<br>(New Mexico) | 2490 West 26th Ave., Denver, CO 80211                                   |
| Idaho                    | 304 North 8th Street, Room 345, Boise, ID 83702                         |
| Montana                  | 10 East Babcock, Room 443, Federal Building, Bozeman, MT 59715          |
| Nevada                   | 50 South Virginia Street, Third Floor, Reno, NV 89505                   |
| Oregon                   | 1220 Southwest 3rd Ave., 16th Floor, Portland, OR 97204                 |
| Utah                     | 4402 Federal Building, 125 South State Street, Salt Lake City, UT 84147 |
| Washington               | 360 U.S. Court House, Spokane, WA 99201                                 |
| Wyoming                  | Federal Building, 100 East "B" Street, Casper, WY 82602                 |

In addition to state reports, a Water Supply Outlook for the Western United States is published by the Soil Conservation Service and National Weather Service monthly, January through May. Reports may be obtained from the Soil Conservation Service, West National Technical Center, 511 Northwest Broadway, Room 547, Portland, OR 97209.

Published by other agencies:

Water Supply Outlook Reports prepared by other agencies include: California — Snow Survey Branch, California Department of Water Resources, P.O. Box 388, Sacramento, CA 95802; British Columbia — The Ministry of Environment, Water Investigations Branch, Parliament Buildings, Victoria, British Columbia, V8V 1X5; Yukon Territory — Department of Indian and Northern Affairs, Northern Operations Branch, 200 Range Road, Whitehorse, Yukon Territory, Y1A 3V1; Alberta, Saskatchewan, and N.W.T. — The Water Survey of Canada, Inland Waters Branch, 110-12 Avenue S.W., Calgary, Alberta, T3C 1A6.

# Arizona Water Supply Outlook

and

## Federal-State-Private Cooperative Snow Surveys

### Issued by

Wilson Scaling  
Chief  
Soil Conservation Service  
Washington, D.C.

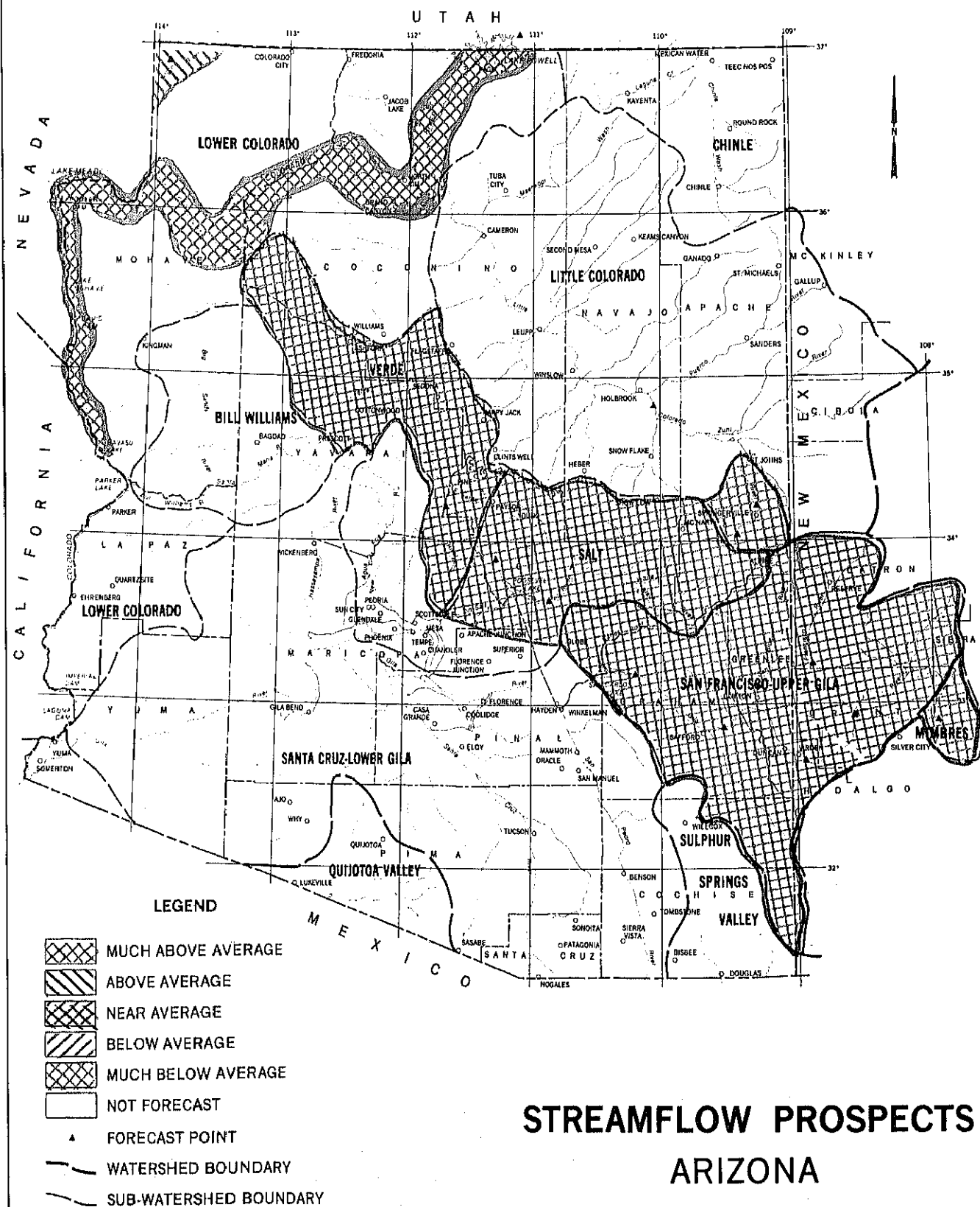
### Released by

Verne M. Bathurst  
State Conservationist  
Soil Conservation Service  
Phoenix, Arizona

### Prepared by

Ronald A. Jones  
Water Supply Specialist  
Soil Conservation Service  
201 E. Indianola Ave., Suite 200  
Phoenix, Arizona 85021

"Programs and assistance of the United States Department of Agriculture are available without regard to race, creed, color, sex, age, or national origin."



SOURCE: Data compiled by SCS  
Field Personnel.

MARCH 1985 4-R-39105

## GENERAL OUTLOOK

### SUMMARY:

March precipitation and snowmelt produced an increase in streamflow for the month, but the April-May outlook still calls for below average runoff. The April 1 snowpack was much below average and little snow is left except in the San Francisco Peaks, the Chuska Mountains, and the interior parts of the White Mountains. The Salt River is forecast to run 51% of average, Tonto Creek 42% and the Verde River 44%. The San Francisco River should run in the 60% range and the Gila 60%-65%. The Little Colorado is forecast at 68% at Greer and 54% at Lyman Reservoir. Inflow to Lake Powell is forecast to be 144% of average over the April-July period.

### SNOWPACK:

Much below average snowpack remains on April 1. Snow surveys and telemetry data showed that the snowpack of Arizona and western New Mexico had continued its up and down pattern during March just as it had all winter beginning in late November. Dry conditions in December and January, coupled with periods of warm temperatures depleted the snow from November. Snow received from early and mid February storms melted due to much above average temperatures in late February. Early and mid March storms again built up the mountain snow only to have it melt from another period of warm weather. Only special areas such as the San Francisco Peaks and the Chuska Mountains deviated very much from this pattern.

#### Snowpack - Percent of Average

| <u>Basin</u>                 | <u>March 1</u> | <u>March 15</u> | <u>April 1</u> |
|------------------------------|----------------|-----------------|----------------|
| Salt River                   | 34             | 51              | 23             |
| Verde River                  | 23             | 40              | 29             |
| San Francisco/<br>Gila River | 38             | 53              | 25             |
| Little Colorado<br>River     | 40             | 37              | 15             |
| Grand Canyon                 | 63             | 79              | 58             |
| Mimbres River                | 7              | 73              | 0              |
| San Francisco<br>Peaks       | 99             | 97              | 106            |
| Chuska Mountains<br>(est.)   | 90             | 82              | 73             |

**PRECIPITATION:** Precipitation during March was above average on all forecast basins, ranging from 105% on the lower Colorado River area of northwestern Arizona to 162% on the Mimbres watershed in New Mexico. Most of this precipitation came during the first three weeks of the month with a major storm from March 15 to 18. The general March precipitation and temperature pattern was almost a duplicate of that experienced in February.

**RESERVOIRS:**

April 1 reservoir storage is above average and most large water supply impoundments are nearly full. The Salt River Project system reported 97% of capacity storage with 1,966,000 acre feet. San Carlos was 97% full with 905,000 acre feet. Lake Pleasant held 89,000 acre feet at 57% of capacity. A combined storage of 47,513,000 acre feet was being held in Lakes Powell Mead, Mohave, and Havasu, accounting for 89% of their capacity. Smaller reservoirs increased their storage from March runoff. Lyman Lake reported 27,400 acre feet in storage. Show Low Lake held 3100 acre feet. Watson Lake and Willow Lake each held 4400 acre feet.

**STREAMFLOW:**

Streamflow increased during March in response to a two edged condition reminiscent of February. Rain from the storms of early and mid March produced increased streamflow while snow was building at the higher elevations. When the weather cleared near the 19th, abnormally warm temperatures set in and accelerated snow melt resulted. Streamflow volumes increased further. Many streams produced normal to above normal runoff for the month.

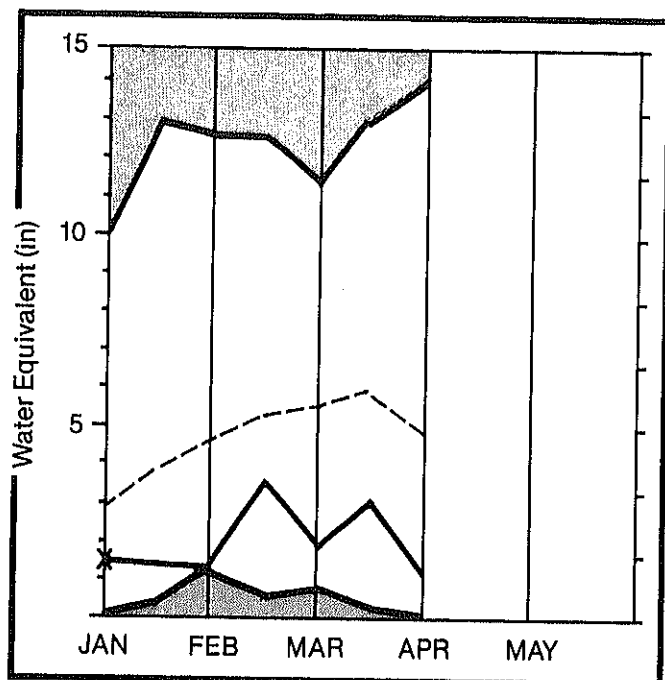
Preliminary Streamflow Observations  
March, 1986

| <u>Stream</u>      | <u>1000's<br/>acre feet</u> | <u>Percent<br/>of<br/>average</u> |
|--------------------|-----------------------------|-----------------------------------|
| Salt River         | 152.2                       | 121                               |
| Verde River        | 96.5                        | 96                                |
| Tonto Creek        | 44.4                        | 130                               |
| Gila River         |                             |                                   |
| Virden             | 24.8                        | 94                                |
| Solomon            | 41.4                        | 74                                |
| Calva              | 37.8                        | 90                                |
| San Fransico River |                             |                                   |
| Clifton            | 17.3                        | 69                                |

All streamflow forecasts are coordinated between the Soil Conservation Service and the National Weather Service. All averages and percentages of average are based on the 20 year period 1961-1980.

# Salt River Basin

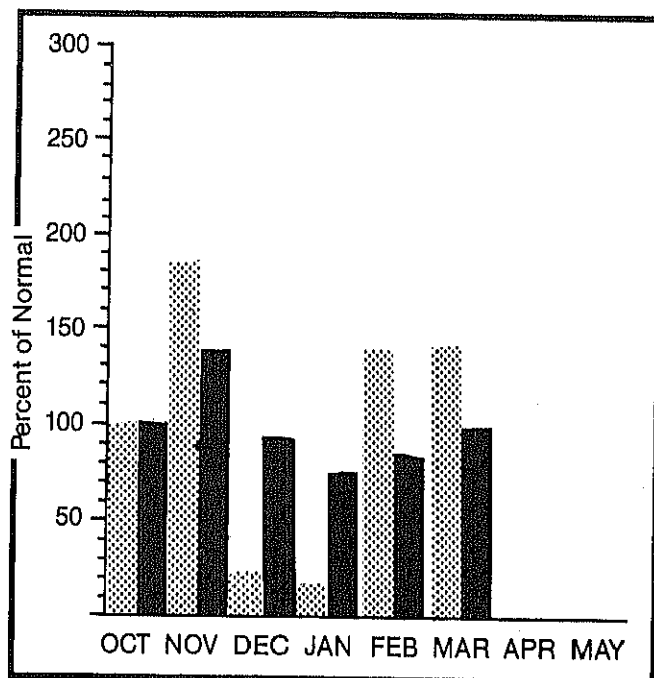
**Mountain snowpack\*** (inches)



\*Based on selected stations

Maximum  Average   
 Minimum  Current 

**Precipitation\*** (percent of normal)



\*Based on selected stations

Monthly precipitation  Year to date precipitation 

April 1, 1986

## **WATER SUPPLY OUTLOOK:**

The Salt River is forecast to produce 51% of average runoff and Tonto Creek, 42% over the April-May period. March precipitation was 140% of average but the April 1 snowpack was only 23% of average. Warm temperatures in late March melted much of the snow. This, coupled with rain runoff, produced above average March streamflow. Salt River Project reservoirs on the Salt River were 99% full on April 1 with 1,687,000 acre feet in storage. Lake Pleasant reported 89,000 acre feet at 57% of capacity.

For further information contact your local Soil Conservation Service office.

# SALT RIVER BASIN

## STREAMFLOW FORECASTS

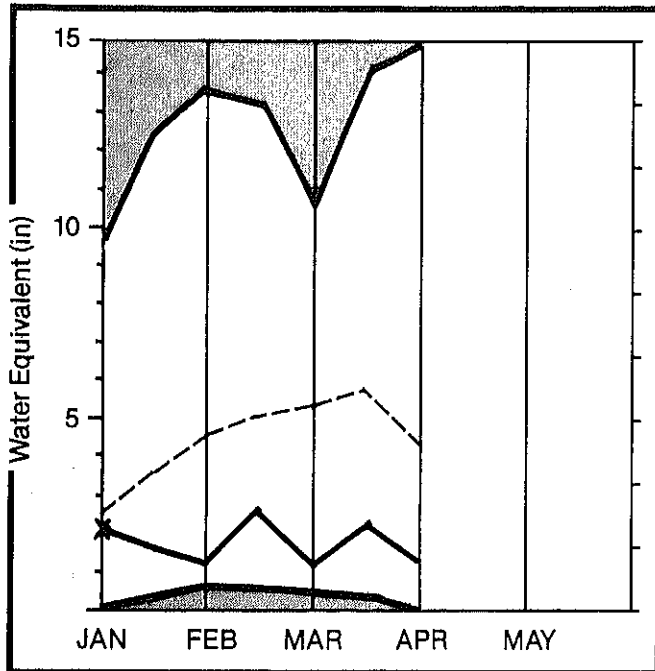
| FORECAST POINT             | FORECAST PERIOD  | 20 YR. AVE. (1000AF) | MOST PROBABLE (1000AF) | MOST PROBABLE (% AVE.) | REAS. MAX. (% AVE.) | REAS. MIN. (% AVE.) | PEAK FLOW (CFS) | PEAK DATE | LOW FLOW (CFS) | LOW DATE |
|----------------------------|------------------|----------------------|------------------------|------------------------|---------------------|---------------------|-----------------|-----------|----------------|----------|
| SALT RIVER near Roosevelt  | APR-MAY<br>APRIL | 204.1<br>130.7       | 105.0<br>73.0          | 51<br>55               | 117                 | 21                  |                 |           |                |          |
| TONTD CREEK near Roosevelt | APR-MAY<br>APRIL | 14.2<br>11.2         | 6.0<br>5.0             | 42<br>45               | 134                 | 14                  |                 |           |                |          |

| RESERVOIR STORAGE (1000AF) |                  |           |           |        | WATERSHED SNOWPACK ANALYSIS |                   |                                    |
|----------------------------|------------------|-----------|-----------|--------|-----------------------------|-------------------|------------------------------------|
| RESERVOIR                  | USEABLE CAPACITY | THIS YEAR | LAST YEAR | AVE.   | WATERSHED                   | NO. COURSES AVE.D | THIS YEAR AS % OF LAST YR. AVERAGE |
| SALT RIVER RES SYSTEM      | 1709.0           | 1487.1    | 1452.6    | 1283.0 | SALT RIVER                  | 8                 | 25 22                              |
| LAKE PLEASANT              | 157.6            | 88.8      | 122.9     | 85.0   |                             |                   |                                    |

\*Corrected for upstream diversions or changes in reservoir storage.  
Average is for 1961-80 period.

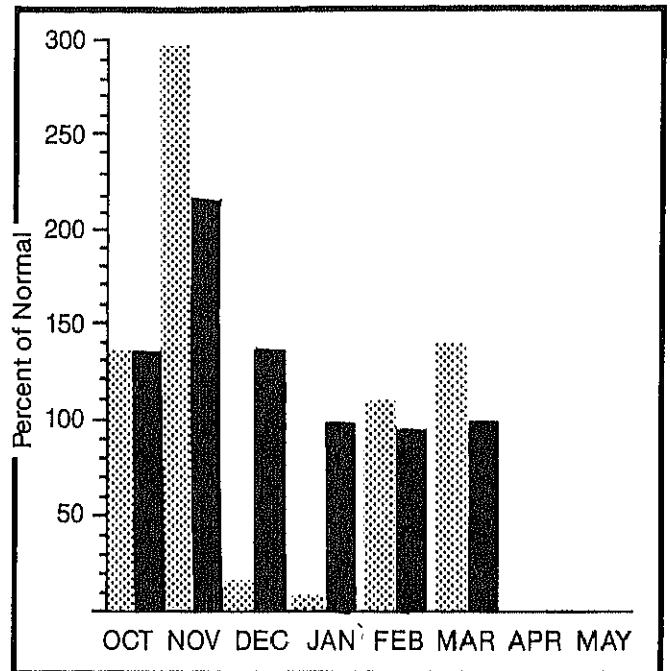
# Verde River Basin

**Mountain snowpack\* (Inches)**





\*Based on selected stations

**Precipitation\* (percent of normal)**



\*Based on selected stations

Maximum  Average   
Minimum  Current 

Monthly precipitation  Year to date precipitation 

April 1, 1986

## **WATER SUPPLY OUTLOOK:**

The April-May forecast on the Verde river calls for 44% of average runoff. Five hundred acre feet or less is expected to enter Lake Mary or flow in Granite or Willow Creek. March precipitation was 139% of average which produced near average runoff on the Verde River for the month. Even though snow was deposited on the basin, most of it melted by late March. The April 1 snowpack was only 29% of average. Because of its higher elevation the San Francisco Peaks snow was still 106% of average. Salt River Project reservoirs on the Verde River had an April 1 storage of 279,000 acre feet at 90% of capacity. Watson and Willow Lakes each held 4400 acre feet.

For further information contact your local Soil Conservation Service office.



# VERDE RIVER BASIN

## STREAMFLOW FORECASTS

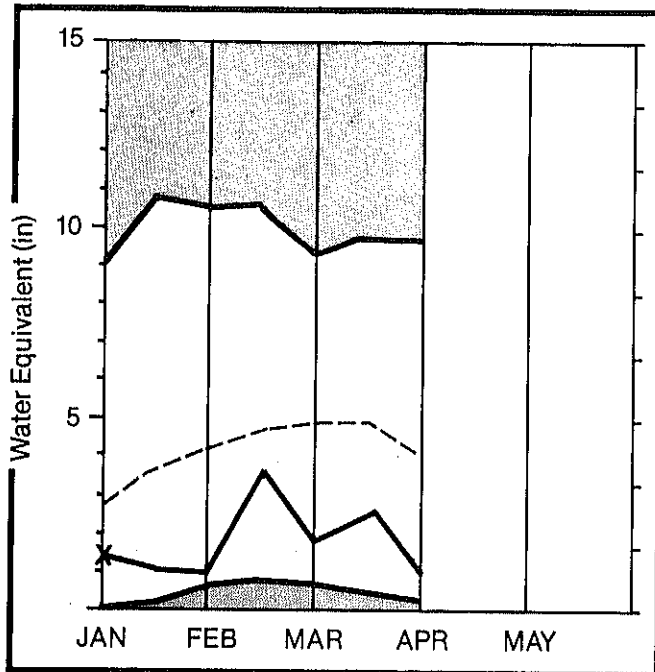
| FORECAST POINT              | FORECAST PERIOD  | 20 YR. AVE. (1000AF) | MOST PROBABLE (1000AF) | MOST PROBABLE (% AVE.) | REAS. MAX. (% AVE.) | REAS. MIN. (% AVE.) | PEAK FLOW (CFS) | PEAK DATE | LOW FLOW (CFS) | LOW DATE |
|-----------------------------|------------------|----------------------|------------------------|------------------------|---------------------|---------------------|-----------------|-----------|----------------|----------|
| VERDE RIVER above Horseshoe | APR-MAY<br>APRIL | 81.1<br>65.6         | 36.0<br>26.0           | 44<br>39               | 171                 | 17                  |                 |           |                |          |
| GRANITE CREEK               | APR-MAY          | ---                  | 0.5                    |                        |                     |                     |                 |           |                |          |
| WILLOW CREEK                | APR-MAY          | ---                  | 0.4                    |                        |                     |                     |                 |           |                |          |
| LAKE MARY INFLOW            | APR-MAY          | ---                  | 0.3                    |                        |                     |                     |                 |           |                |          |

| RESERVOIR STORAGE (1000AF) |                  |                              |                              |         | WATERSHED SNOWPACK ANALYSIS |                   |                                    |     |
|----------------------------|------------------|------------------------------|------------------------------|---------|-----------------------------|-------------------|------------------------------------|-----|
| RESERVOIR                  | USEABLE CAPACITY | XX USEABLE STORAGE THIS YEAR | XX USEABLE STORAGE LAST YEAR | XX AVE. | WATERSHED                   | NO. COURSES AVE.D | THIS YEAR AS % OF LAST YR. AVERAGE |     |
| VERDE RIVER RES SYSTEM     | 309.6            | 278.6                        | 308.6                        | 162.9   | VERDE RIVER                 | 10                | 29                                 | 28  |
| WATSON LAKE                | 4.7              | 4.4                          | 4.5                          | 3.6     | SAN FRANCISCO PEAKS         | 4                 | 75                                 | 106 |
| WILLOW CREEK               | 6.1              | 4.4                          | 6.1                          | 3.5     |                             |                   |                                    |     |

\*Corrected for upstream diversions or changes in reservoir storage.  
Average is for 1961-80 period.

# San Francisco - Upper Gila River Basin

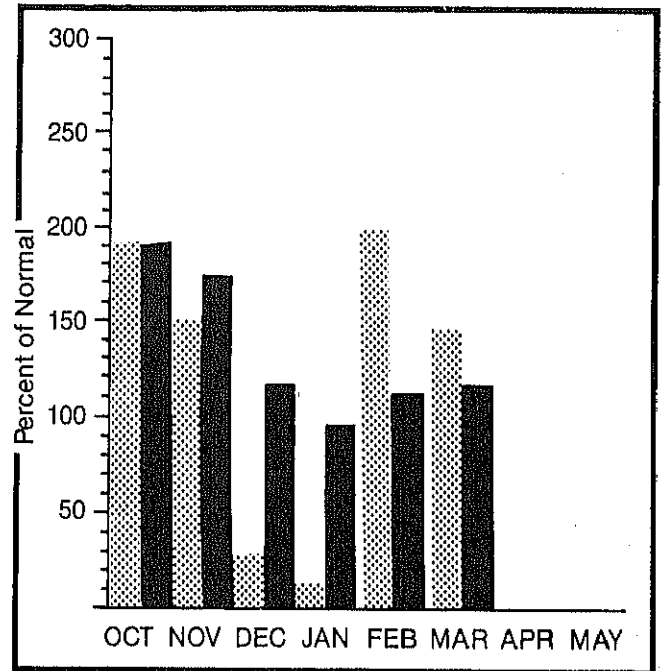
**Mountain snowpack\* (inches)**



\*Based on selected stations

Maximum Average   
Minimum Current

**Precipitation\* (percent of normal)**



\*Based on selected stations

Monthly precipitation Year to date precipitation

April 1, 1986

## **WATER SUPPLY OUTLOOK:**

Below average April-May streamflow is forecast on the Gila basin. The San Francisco River is only expected to produce 61% of average at Clifton. The Gila River is forecast to run 65% at Virden, 59% at Head of Safford Valley, and only 26% at Calva. March precipitation was 146% of average over the basin. Warm temperatures in late March melted much of the snow and the April 1 snowpack was only 25% of average. March runoff was below to near average even with the precipitation and snowmelt. San Carlos reservoir was 97% full on April 1 with 905,000 acre feet in storage.

For further information contact your local Soil Conservation Service office.

# SAN FRANCISCO - UPPER GILA RIVER BASIN

## STREAMFLOW FORECASTS

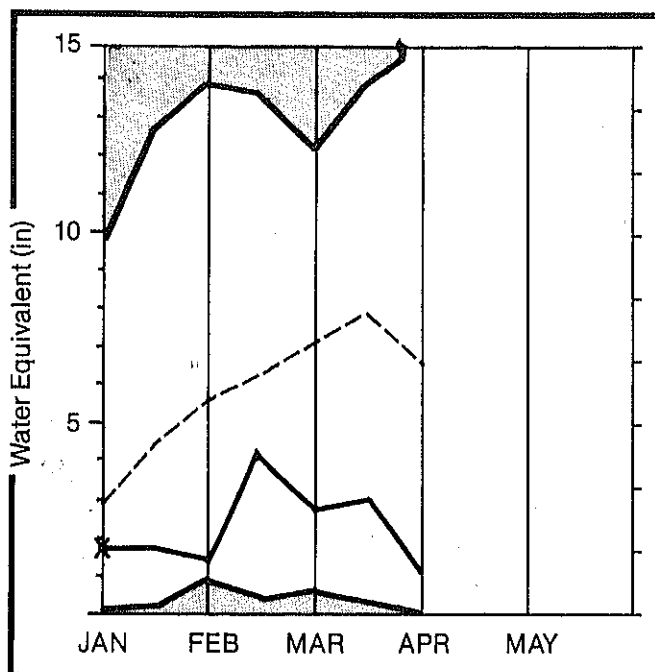
| FORECAST POINT                   | FORECAST PERIOD | 20 YR. AVE. (1000AF) | MOST PROBABLE (1000AF) | MOST PROBABLE (% AVE.) | REAS. MAX. (% AVE.) | REAS. MIN. (% AVE.) | PEAK FLOW (CFS) | PEAK DATE | LOW FLOW (CFS) | LOW DATE |
|----------------------------------|-----------------|----------------------|------------------------|------------------------|---------------------|---------------------|-----------------|-----------|----------------|----------|
| SAN FRANCISCO RIVER at Glenwood  | APR-MAY         | 15.4                 | 10.0                   | 64                     | 214                 | 26                  |                 |           |                |          |
| SAN FRANCISCO RIVER at Clifton   | APR-MAY         | 31.0                 | 19.0                   | 61                     | 271                 | 26                  |                 |           |                |          |
| GILA RIVER at Gila               | APR-MAY         | 23.7                 | 16.0                   | 67                     | 152                 | 25                  |                 |           |                |          |
| GILA RIVER near Virden           | APR-MAY         | 27.5                 | 18.0                   | 65                     | 167                 | 25                  |                 |           |                |          |
| GILA RIVER near Solomon          | APR-MAY         | 57.0                 | 34.0                   | 59                     | 277                 | 25                  |                 |           |                |          |
|                                  | APRIL           | 37.3                 | 24.0                   | 64                     |                     |                     |                 |           |                |          |
| GILA RIVER at Calva (unadjusted) | APR-MAY         | 37.4                 | 10.0                   | 26                     | 227                 | 11                  |                 |           |                |          |

| RESEVOIR STORAGE (1000AF) |                  |                           |                           |                      | WATERSHED SNOWPACK ANALYSIS |                   |                                    |
|---------------------------|------------------|---------------------------|---------------------------|----------------------|-----------------------------|-------------------|------------------------------------|
| RESEVOIR                  | USEABLE CAPACITY | USEABLE STORAGE THIS YEAR | USEABLE STORAGE LAST YEAR | USEABLE STORAGE AVE. | WATERSHED                   | NO. COURSES AVE.D | THIS YEAR AS % OF LAST YR. AVERAGE |
| SAN CARLOS                | 935.0            | 905.4                     | 943.9                     | 320.2                | SAN FRANCISCO/GILA RIVER    | 7                 | 24 25                              |
| PAINTED ROCK DAM          | 2492.0           | 0.0                       | 274.2                     | ---                  |                             |                   |                                    |


\*Corrected for upstream diversions or changes in reservoir storage.  
Average is for 1961-80 period.

# Little Colorado River Basin

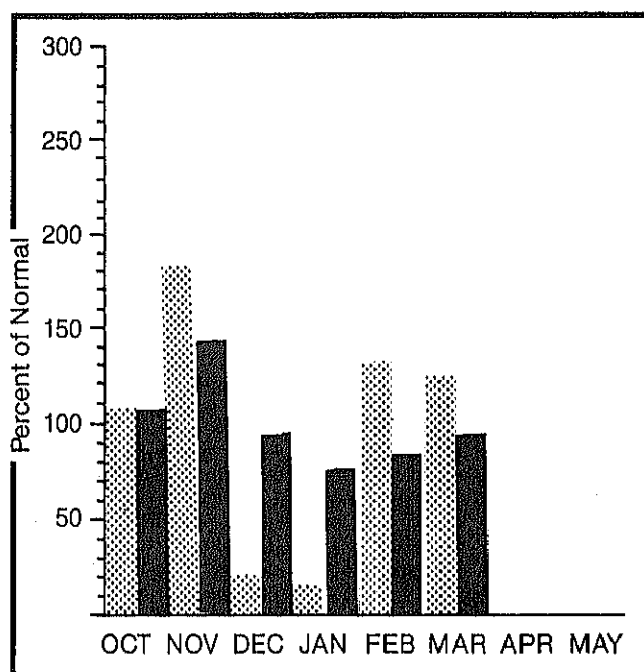
**Mountain snowpack\* (Inches)**





\*Based on selected stations

Maximum  Average   
Minimum  Current 

**Precipitation\* (percent of normal)**



\*Based on selected stations

Monthly precipitation  Year to date precipitation 

April 1, 1986

## **WATER SUPPLY**

### **OUTLOOK:**

April-June runoff on the upper Little Colorado River is forecast to be 68% of average at Greer and 54% at Lyman Reservoir. Precipitation in March was 125% of average. The snowpack built up during March but almost immediately melted. The April 1 snowpack was 15% of average. The Chuska Mountains are estimated to retain a 73% of average snowpack. Lyman Lake held 27,400 acre feet near April 1 and Show Low Lake, 3100 acre feet.

For further information contact your local Soil Conservation Service office.

# LITTLE COLORADO RIVER BASIN

## STREAMFLOW FORECASTS

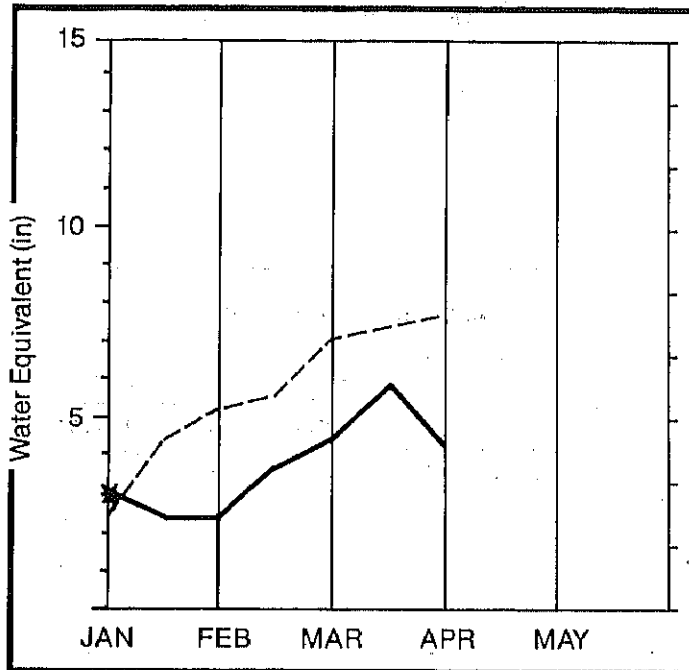
| FORECAST POINT                      | FORECAST PERIOD | 20 YR. AVE. (1000AF) | MOST PROBABLE (1000AF) | MOST PROBABLE (% AVE.) | REAS. MAX. (% AVE.) | REAS. MIN. (% AVE.) | PEAK FLOW (CFB) | PEAK DATE | LOW FLOW (CFB) | LOW DATE |
|-------------------------------------|-----------------|----------------------|------------------------|------------------------|---------------------|---------------------|-----------------|-----------|----------------|----------|
| LITTLE COLORADO RIVER at Greer      | APR-JUN         | 7.0                  | 4.8                    | 68                     | 143                 | 29                  |                 |           |                |          |
| LITTLE COLORADO RIVER ab Lyman Res  | APR-JUN         | 11.0                 | 6.0                    | 54                     | 127                 | 18                  |                 |           |                |          |
| LITTLE COLORADO RIVER at Woodruff * | NOV-JUN         | 17.3                 | 6.0                    | 34                     | 104                 | 12                  |                 |           |                |          |

| RESERVOIR STORAGE (1000AF) |                  |                           |                           |                      | WATERSHED SNOWPACK ANALYSIS |                   |                                    |
|----------------------------|------------------|---------------------------|---------------------------|----------------------|-----------------------------|-------------------|------------------------------------|
| RESERVOIR                  | USEABLE CAPACITY | USEABLE STORAGE THIS YEAR | USEABLE STORAGE LAST YEAR | USEABLE STORAGE AVE. | WATERSHED                   | NO. COURSES AVE.D | THIS YEAR AS % OF LAST YR. AVERAGE |
| LYMAN RESERVOIR            | ---              | 27.4                      | 30.0                      | ---                  | LITTLE COLORADO RIVER       | 5                 | 17 18                              |
| SHON LOW LAKE              | 5.1              | 3.1                       | 5.1                       | ---                  | CHUSKA MOUNTAINS            | 5                 | 52 73                              |

\*Corrected for upstream diversions or changes in reservoir storage.  
Average is for 1961-80 period.

# Lower Colorado River Basin

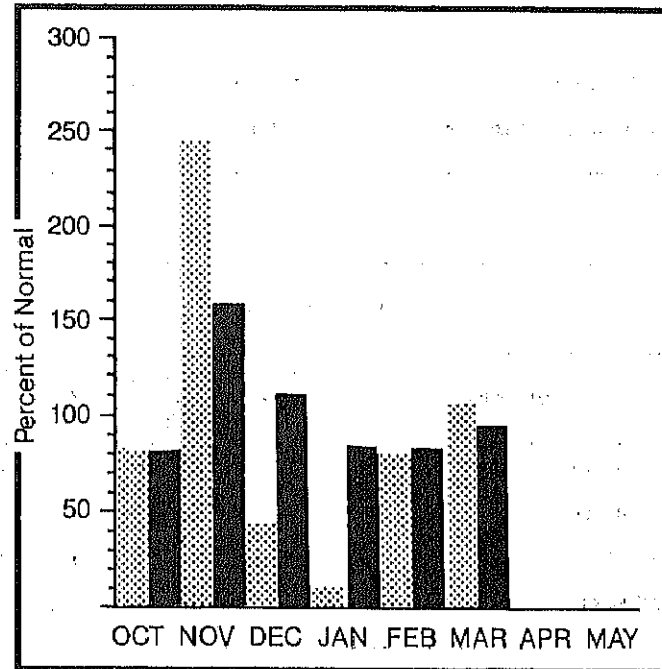
**Mountain snowpack\* (Inches)**



\*Based on selected stations

Maximum ——— Average - - - - -  
Minimum ——— Current ———

**Precipitation\* (percent of normal)**



\*Based on selected stations

Monthly precipitation  Year to date precipitation 

April 1, 1986

## **WATER SUPPLY OUTLOOK:**

The Colorado River is forecast to produce 10,800,000 acre feet inflow to Lake Powell at 144% of average for April-July. The Virgin River at Littlefield is forecast to run 96% of average over the April-June period. Northwestern Arizona received 105% of average precipitation during March. The April 1 snowpack in the Grand Canyon area was only 58% of average. Reservoir storage on April 1 for Lakes Powell, Mead, Mohave, and Havasu totaled 47,513,000 acre feet at 89% of capacity.

For further information contact your local Soil Conservation Service office.

# LOWER COLORADO RIVER BASIN

## STREAMFLOW FORECASTS

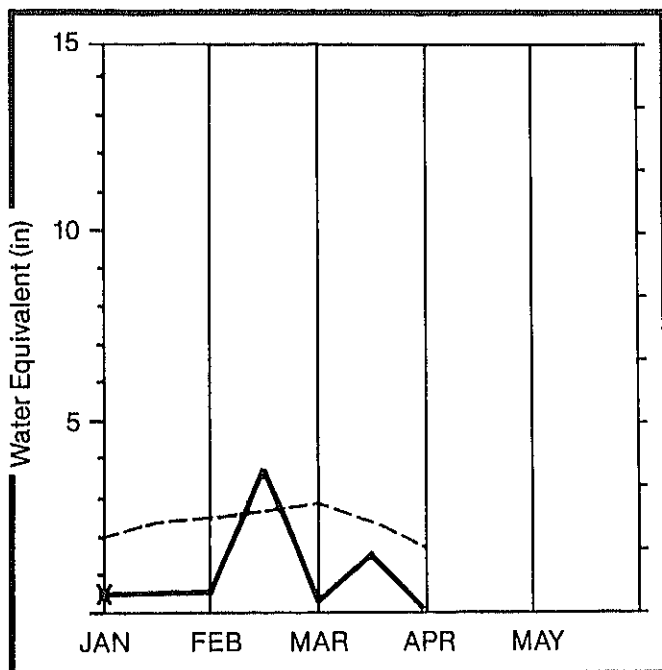
| FORECAST POINT                | FORECAST PERIOD | 20 YR. AVE. (1000AF) | MOST PROBABLE (1000AF) | MOST PROBABLE (% AVE.) | REAS. MAX. (% AVE.) | REAS. MIN. (% AVE.) | PEAK FLOW (CFS) | PEAK DATE | LOW FLOW (CFS) | LOW DATE |
|-------------------------------|-----------------|----------------------|------------------------|------------------------|---------------------|---------------------|-----------------|-----------|----------------|----------|
| VIRGIN RIVER near Littlefield | APR-JUN         | 62.0                 | 60.0                   | 96                     | 127                 | 77                  |                 |           |                |          |
| INFLOW to LAKE POWELL *       | APR-JUL         | 7462.0               | 10800.0                | 144                    | 173                 | 120                 |                 |           |                |          |

| RESERVOIR STORAGE (1000AF) |                  |                           |                           |                      | WATERSHED SNOWPACK ANALYSIS |                   |                                    |
|----------------------------|------------------|---------------------------|---------------------------|----------------------|-----------------------------|-------------------|------------------------------------|
| RESERVOIR                  | USEABLE CAPACITY | USEABLE STORAGE THIS YEAR | USEABLE STORAGE LAST YEAR | USEABLE STORAGE AVE. | WATERSHED                   | NO. COURSES AVE.D | THIS YEAR AS % OF LAST YR. AVERAGE |
| LAKE HAVASU                | 619.4            | 558.0                     | 573.0                     | 558.0                | LOWER COLORADO RIVER        | 2                 | 51 50                              |
| LAKE MOHAVE                | 1810.0           | 1648.2                    | 1732.0                    | 1648.0               |                             |                   |                                    |
| LAKE MEAD                  | 26159.0          | 23373.0                   | 23841.0                   | 18170.0              |                             |                   |                                    |
| LAKE POWELL                | 25002.0          | 22612.0                   | 21398.0                   | 11200.0              |                             |                   |                                    |

\*Corrected for upstream diversions or changes in reservoir storage.  
Average is for 1961-80 period.

# Mimbres River Basin

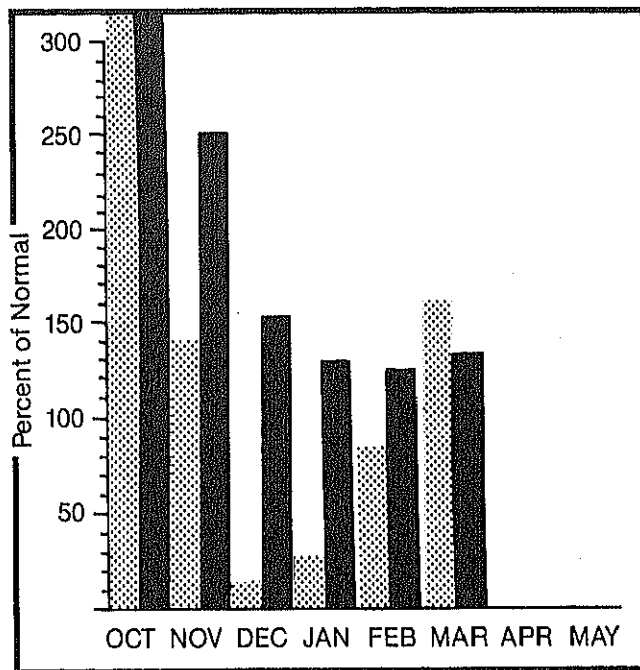
**Mountain snowpack\*** (Inches)



\*Based on selected stations

Maximum Average   
Minimum Current

**Precipitation\*** (percent of normal)



\*Based on selected stations

Monthly precipitation Year to date precipitation

April 1, 1986

## **WATER SUPPLY OUTLOOK:**

Light runoff is expected on the Mimbres River during April-May. The forecast calls for only 500 acre feet or 25% of average. March precipitation was 162% of average but this has already run off. The snowpack on the Mimbres watershed was essentially gone as of April 1.

For further information contact your local Soil Conservation Service office.



# HIMBRES RIVER BASIN

## STREAMFLOW FORECASTS

| FORECAST POINT             | FORECAST PERIOD | 20 YR. AVE. (1000AF) | MOST PROBABLE (1000AF) | MOST PROBABLE (% AVE.) | REAS. MAX. (% AVE.) | REAS. MIN. (% AVE.) | PEAK FLOW (CFS) | PEAK DATE | LOW FLOW (CFS) | LOW DATE |
|----------------------------|-----------------|----------------------|------------------------|------------------------|---------------------|---------------------|-----------------|-----------|----------------|----------|
| HIMBRES RIVER near Himbres | APR-MAY         | 2.0                  | 0.5                    | 25                     | 150                 | 10                  |                 |           |                |          |

| RESERVOIR STORAGE (1000AF) |                  |                           |                           |                      | WATERSHED SNOWPACK ANALYSIS |                   |                                    |
|----------------------------|------------------|---------------------------|---------------------------|----------------------|-----------------------------|-------------------|------------------------------------|
| RESERVOIR                  | USEABLE CAPACITY | USEABLE STORAGE THIS YEAR | USEABLE STORAGE LAST YEAR | USEABLE STORAGE AVE. | WATERSHED                   | NO. COURSES AVE.D | THIS YEAR AS % OF LAST YR. AVERAGE |
|                            |                  |                           |                           |                      | HIMBRES RIVER               | 3                 |                                    |

\*Corrected for upstream diversions or changes in reservoir storage.  
Average is for 1961-80 period.

## **DATA SITES USED TO DETERMINE SNOW PACK WATER**

### **SALT RIVER**

Baldy  
Beaverhead  
Coronado Trail  
Forest Dale Alternate  
Hannagan Meadows  
Heber  
Maverick Fork  
Workman Creek

### **VERDE RIVER**

Baker Butte  
Baker Butte #2  
Chalender  
Copper Basin Divide  
Fort Valley  
Gaddes Canyon  
Happy Jack  
Mingus Mountain  
Morman Mountain  
Mormon Mt. Summit #2  
White Horse Lake Jct.  
Williams Ski Run

### **GILA/SAN FRANCISCO RIVER**

Beaverhead  
Coronado Trail  
Frisco Divide  
Hannagan Meadows  
Signal Peak Snotel  
Silver Creek Divide  
State Line

### **LITTLE COLORADO RIVER**

Baldy  
Cheese Spring  
Heber  
Nutrioso  
Promontory Butte

### **LOWER COLORADO RIVER**

Bright Angel  
Grand Canyon

### **SAN FRANCISCO PEAKS**

Inner Basin #1  
Inner Basin #2  
Snow Bowl #1 Alternate  
Snow Bowl #2

### **CHUSKA MOUNTAINS**

Bowl Canyon  
Tsail Canyon #1  
Tsail Canyon #2  
Wheatfields  
Whiskey Creek

### **MIMBRES RIVER**

Emory Pass #2  
McKnight Cabin  
Signal Peak Snotel

## **STATIONS USED TO DETERMINE PERCENT OF NORMAL PRECIPITATION**

### **SALT RIVER**

Alpine R.S.  
Baldy Snotel  
Black River Pumps  
Buck Spring Snotel  
Coronado Trail Snotel  
Hannagan Meadows Snotel  
Heber Snotel  
Maverick Fork Snotel  
Pleasant Valley R.S.  
Promontory Snotel  
Sierra Ancha  
Tonto Fish Hatchery  
Wildcat Snotel  
Workman Creek Snotel

### **LITTLE COLORADO RIVER**

Baldy Snotel  
Buck Spring Snotel  
Flagstaff  
Heber Snotel  
Holbrook  
Mormon Mountain Snotel  
Promontory Snotel  
Springerville  
Tuba City  
Window Rock

### **LOWER COLORADO RIVER**

Bright Angel  
Colorado City  
Fredonia  
Grand Canyon  
Kingman  
Page  
Williams

### **VERDE RIVER**

Ashfork  
Baker Butte Snotel  
Beaver Creek R.S.  
Copper Basin Divide  
Flagstaff  
Fort Valley  
Fry Snotel  
Happy Jack  
Mingus Mountain  
Mormon Mountain Snotel  
Payson R.S.  
Prescott  
Sugar Loaf Snotel  
White Horse Lake Snotel

### **GILA/SAN FRANCISCO RIVER**

Alpine R.S.  
Beaverhead R.S.  
Clifton  
Coronado Trail Snotel  
Frisco Divide Snotel  
Hannagan Meadows Snotel  
Lookout Mountain Snotel  
Luna R.S.  
Reserve R.S.  
Safford Exp. Farm  
Signal Peak Snotel  
Silver City  
Silver Creek Divide Snotel  
Fort Bayard

### **MIMBRES RIVER**

Mimbres R.S.  
Signal Peak Snotel





# The Following Organizations Cooperate With The Soil Conservation Service in Snow Survey Work

## **Federal**

Department of Agriculture  
Soil Conservation Service  
Forest Service  
Apache-Sitgreaves National Forest  
Coconino National Forest  
Coronado National Forest  
Gila National Forest  
Kaibab National Forest  
Prescott National Forest  
Tonto National Forest  
Rocky Mountain Forest and Range Experiment Station  
Department of Commerce  
NOAA, National Weather Service  
Department of Interior  
Bureau of Reclamation  
Region III  
Geological Survey  
Arizona District  
New Mexico District  
Bureau of Indian Affairs  
Navajo Reservation  
San Carlos Irrigation Project  
National Park Service  
Grand Canyon National Park  
Gila Water Commissioner  
Safford, Arizona

## **State**

Arizona Department of Water Resources  
Arizona Game and Fish Department  
Arizona State Parks Board  
  
Arizona State University  
Laboratory of Climatology  
(State Climatologist)  
  
University of Arizona  
Arizona Agricultural Experiment Station  
Water Resource Research Center  
Department of Watershed Management

## **Municipal**

### **Irrigation Projects**

City of Flagstaff  
  
Salt River Valley Water Users' Association  
Phoenix, Arizona  
San Carlos Irrigation and Drainage District  
Coolidge, Arizona  
Maricopa County Municipal Water Conservation District  
Peoria, Arizona

## **Indian Tribes**

Navajo Nation  
Window Rock, Arizona

## **Private**

Southwest Forest Industries, Inc.  
Phoenix, Arizona

Other organizations and individuals furnish valuable information for the snow survey reports. Their cooperation is gratefully acknowledged.